



# UNITED STATES PATENT and TRADEMARK OFFICE

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND  
DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE  
WASHINGTON, D.C. 20231  
WWW.USPTO.GOV

GC

Mailed: 3-15-07

In re application of :  
Fan, Qinbai :  
Serial No. 10/642,852 : DECISION ON  
Filed: August 18, 2003 : PETITION  
For: DIRECT METHANOL FUEL CELL :  
ELECTRODE CATALYST :  
:

This is a decision on the PETITION UNDER 37 CFR 1.144 TO WITHDRAW THE RESTRICTION REQUIREMENT filed June 12, 2006.

On April 10, 2006, a four way restriction requirement was made by the Examiner. The Examiner took the position that the groupings of claims were related as combination and subcombination (I and II), unrelated inventions (I and III), unrelated inventions (I and IV), process of making and product made (II and III), unrelated inventions (II and IV), and unrelated inventions (III and IV). Applicant traversed the restriction requirement in a response filed April 28, 2006. The Examiner maintained the restriction requirement in the Office Action mailed on May 24, 2006.

On June 12, 2006, the instant petition under 37 CFR 1.144 was filed to formally request the withdrawal of the restriction requirement.

Applicant's position for the withdrawal of the restriction requirement is that the Examiner has not shown that each of the Groups are distinct and that the Inventions are related.

## DECISION

Section 803 [R-3] of the MPEP states:

### 803 [R-3] Restriction — When Proper

Under the statute, the claims of an application may properly be required to be restricted to one of two or more claimed inventions only if they are able to support separate patents and they are either independent (MPEP § 802.01, § 806.06, and § 808.01) or distinct (MPEP § 806.05 - § 806.05(j)).

Section 806.05(c) [R-3] of the MPEP states:

### 806.05(c) [R-3] Criteria of Distinctness Between Combination and Subcombination

To support a requirement for restriction between combination and subcombination inventions, both two-way distinctness and reasons for insisting on restriction are necessary, i.e., there would be a serious search burden as evidenced by separate classification, status, or field of search. See MPEP § 808.02.

The inventions are distinct if it can be shown that a combination as claimed:

- (A) does not require the particulars of the subcombination as claimed for patentability (to show novelty and unobviousness), and
- (B) the subcombination can be shown to have utility either by itself or in another materially different combination.

Section 806.05(f) [R-3] of the MPEP states:

**806.05(f) [R-3] Process of Making and Product Made**

A process of making and a product made by the process can be shown to be distinct inventions if either or both of the following can be shown: (A) that the process as claimed is not an obvious process of making the product and the process as claimed can be used to make another materially different product; or (B) that the product as claimed can be made by another materially different process.

Section 806.06 [R-3] of the MPEP states:

**806.06 [R-3] Independent Inventions**

Inventions as claimed are independent if there is no disclosed relationship between the inventions, that is, they are unconnected in design, operation, and effect. If it can be shown that two or more inventions are independent, and if there would be a serious burden on the examiner if restriction is not required, applicant should be required to restrict the claims presented to one of such independent inventions.

Petitioner argues that the Groups I (Claims 1-14) and II (Claims 15-19) are not distinct in that the combination in Claim 1 does require the particulars of the subcombination as claimed for patentability. These arguments are not persuasive. The independent Claim 15 of the subcombination requires a gas diffusion layer, an anode catalyst layer disposed on the surface of the gas diffusion layer, and the anode catalyst layer comprising a plurality of catalyst particles and a catalyst particle binder. None of the claims in Group I require these limitations. Additionally the subcombination can be shown to have separate utility such as an electrode in an environment separate from a fuel cell. Consequently the restriction requirement between Groups I and II is proper.

Petitioner argues that the Groups I (Claims 1-14) and III (Claims 20-29) are related inventions, namely a Product and a Process for Making and the Examiner has not shown that the Groups are distinct. While the Petitioner is correct in describing the relationship between Groups I and III as Product Made and Process of Making, the Groups are distinct. The product as claimed can be made by another materially different process such as one not requiring a step of mixing a plurality of anode catalyst particles with a binder material and the step of forming an anode catalyst ink. It is noted that the product claims do not require particles in a binder material for the anode catalyst layer. Consequently the restriction requirement between Groups I and III is proper.

Petitioner argues that the Groups I (Claims 1-14) and IV (Claims 30-39) are related inventions, namely Claim 30 is a method for producing the product of Claim 1. It is first noted that Claim 30 appears to be unclear as to whether a product or a method is claimed, therefore the restriction will be based on Applicant's intention to claim a method. While the Petitioner is assumed to be correct in describing the relationship between Groups I and IV as Product Made and Process of Making, the Groups are distinct. The product as claimed can be made by another materially different process such as one not requiring a direct methanol fuel cell, a step of reducing and substantially eliminating methanol crossover, and the step of applying a catalyst ink. It is noted that the product claims do not

require a direct methanol fuel cell, nor a catalyst ink. Consequently the restriction requirement between Groups I and IV is proper.

Petitioner argues that the Groups II (Claims 15-19) and III (Claims 20-29) are not distinct inventions because the method steps do include a mixing step. It appears as though Applicant is misinterpreting the basis for distinctness due to a typographical error by the Examiner. The product as claimed can be made by another materially different process such as one not requiring a step of mixing a plurality of anode catalyst particles with a binder material, the step of forming an anode catalyst ink, and the step of forming a fuel cell anode electrode. It is noted that the product claims do not require a fuel cell nor a catalyst ink. Additionally, the particles and binder in the electrode product claims can be formed by applying a binder to the electrode and then applying particles to the binder layer without a prior mixing step. Consequently the restriction requirement between Groups II and III is proper.

Petitioner argues that the Groups II (Claims 15-19) and IV (Claims 30-39) are related inventions and distinctness has not been shown by the Examiner. It is first noted that Claim 30 appears to be unclear as to whether a product or a method is claimed, therefore the restriction will be based on Applicant's intention to claim a method. While the Petitioner is assumed to be correct in describing the relationship between Groups II and IV as Product Made and Process of Making, the Groups are distinct. The product as claimed can be made by another materially different process such as one not requiring a direct methanol fuel cell, a step of reducing and substantially eliminating methanol crossover, and the step of applying a catalyst ink. It is noted that the product claims do not require a direct methanol fuel cell, nor a catalyst ink. It is further noted that the process does not form an electrode with a gas diffusion layer nor an anode catalyst layer with a plurality of catalyst particles and a catalyst particle binder. Consequently the restriction requirement between Groups II and IV is proper.

Petitioner argues that the Groups III (Claims 20-29) and IV (Claims 30-39) are related inventions and distinctness has not been shown by the Examiner. It is first noted that Claim 30 appears to be unclear as to whether a product or a method is claimed, therefore the restriction will be based on Applicant's intention to claim a method. The proper relationship between the Groups is combination (Group IV) and subcombination (Group III) and the Groups are considered to be properly distinct. The independent Claim 20 of the subcombination requires that particulars of a step of mixing a plurality of anode catalyst particles with a binder material, and applying the catalyst ink to an anode electrode gas diffusion layer. None of the claims in Group IV require these limitations. Additionally the subcombination has separate utility such as a method of forming a fuel cell which is not a direct methanol fuel cell and without the step of reducing and substantially eliminating methanol crossover. Consequently the restriction requirement between Groups III and IV is proper.

Accordingly, the restriction requirement is proper and the instant petition to withdraw the restriction requirement is DENIED. The instant Application is being forwarded to the Examiner to consider the response filed by Applicant on June 12, 2006. The subsequent Office Action should include a clarification of the basis for the restriction requirement between the Groups as set forth above.



Jacqueline M. Stone, Director  
Technology Center 1700  
Chemical and Materials Engineering

MARK E. FEJER  
GAS TECHNOLOGY INSTITUTE  
1700 SOUTH MOUNT PROSPECT ROAD  
DES PLAINES IL 60018